There is a record of breeding *T. flammea* by a Devonshire correspondent of the *Entomologist's Record* in 1906 (Vol. 18, p. 136); data as to the origin of the ova are lacking, which is a pity, but if they had been laid by a Devon capture one cannot imagine even the least data-minded collector omitting to state the fact. The only other reference I can find since then is on p. 19 of Vol. 54 of *The Entomologist*—an account of a dead specimen found in a spider's web at Chailey in 1921, to which Dr Cockayne directed my attention. More than one explanation of its presence there has been offered me, but having some respect myself for spiders' webs and bats' midden heaps as " signposts " I think it was probably just another but less well-directed " migrant " than the one whose advent I am recording.

THE RATE OF PROGRESSION IN ANTS.

By Fergus J. O'Rourke, M.Sc., F.R.E.S.

As Mr Pickles has recently (1946) pointed out some interesting facts in regard to the speed of ants, it may be of value to record some further observations on the question. In 1942 I obtained some specimens of the ant *Tetramorium caespitum* at Ballyteige, Co. Wexford. Since this ant is rather rare in this country, I made some observations on the speed at which it travelled with a view to comparing its speed with that of the more common Irish species. Unfortunately, I have not since had the opportunity of doing these further experiments so that it is worth using this occasion to publish the figures for *Tetramorium*. The observations recorded in the table herewith were made on 10th July 1942 at 16.00 Irish Summer Time and at a temperature of 20° C. Two winged females and ten workers were used. The method was to introduce the ants into a narrow bore glass tube about 60 cms. long and to time the speed of the ant over the middle 50 cms. of this tube. It was, however, found that while the females walked the entire length of the tube that the workers, owing to the relatively large bore of the tube, tended to turn back after a short distance. It was therefore decided to time the workers over the length of their first run, provided that this was not less than 10 cms. The time which would be taken to cover 50 cms. was then calculated and is shown in the third column of the table below; in brackets after that figure is given the distance covered by the ant in question.

TABLE SHOWING THE TIME TAKEN TO COVER 50 CMS.

Expt.	Female A.	Female B.	Workers.
1.	37.3 secs.	46.6 secs.	122 secs. (120 mm.).
2.	28.8 secs.	27.1 secs.	111 secs. (110 mm.).
3.	28.7 secs.	33.4 secs.	147 secs. (130 mm.).
4.	27.6 secs.	24.9 secs.	167 secs. (150 mm.).
5.	27.6 secs.	26.4 secs.	187 secs. (220 mm.).
6.	25.9 secs.	25.5 secs.	135 secs. (500 mm.).
7.	29.8 secs.	35.6 secs.	158 secs. (200 mm.).
8.	31.8 secs.	31.9 secs.	110 secs. (300 mm.).
9.	32.5 secs.	35.5 secs.	124 secs. (200 mm.).
10.	29.3 secs.	28.2 secs.	188 secs. (100 mm.).

Average time taken to cover 50 cms.:

Female A:—29.9 secs., i.e., 103 cms. per min. or 41.2 ins. per min.
Female B:—31.5 secs., i.e., 95.2 cms. per min. or 38.1 ins. per min.
Workers:—144 secs., i.e., 20 cms. per min. or 8 ins. per min.

Several remarks may be made on the times recorded above: first, it may be noted that the speed of the two females did not differ appreciably between the two specimens and from one trial to another; secondly, there is considerable variation between the speeds of the workers, the speed of the fastest (No. 10) being almost twice as fast as the slowest (No. 8). Further, the speed of the females was nearly five times that of the average of the workers. It may be of interest to record that the female of this species is just twice the length of the workers. In all cases it may be noted that the speeds are considerably greater than those recorded by Pickles.

Pickles (*loc. cit.*) has drawn attention to many of the factors involved in determining the speed of ants. Two further factors may be considered here. Temperature is an exceedingly important factor in determining the speed at which the ants travel. J. Huxley (1928) quotes the case of an ant which, at 50° F. moved at 52 feet per hour, moved at 780 feet per hour at 100° F. (I have been unable to trace the original reference.) The second factor is what may be called the metabolic state of the ant. S. C. Chen (1937) showed that ants could be divided into two groups which he called leaders and followers respectively. In any nest one could find these groups and as the leaders showed a higher metabolic rate (being more easily affected by anaesthetics, desiccation, and starvation) they would travel at a greater speed. In a further paper Chen showed that if a follower were placed with a group of ants it was stimulated to a greater extent than was a leader. Pickles (*loc. cit.*) says " a small ant may travel quicker than a larger one over a given distance because it is carrying nothing and the larger one may possibly be carrying a load, or there may possibly be no such cause—the individual ant may be more ' interested ' in its immediate surroundings than its fellows and will therefore travel more slowly on that account." It may be suggested that an explanation based on Chen's work may be more likely, although undoubtedly an ant out foraging would be very interested in its surroundings and would probably travel more slowly on that account.—Department of Zoology, University College, Dublin, 18th November 1946.

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